

## Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: TAQA North USA, Inc.  
Well Name/Number: Kudson 14-15  
Location: SW SE Section 14 T37N R57E  
County: Sheridan, MT; Field (or Wildcat) East Flat Lake

### Air Quality

(possible concerns)

Long drilling time: No, 10-15 days drilling time.

Unusually deep drilling (high horsepower rig): Heavy duty double derrick drilling rig to drill a Ratcliffe formation single vertical well, 6,665' TD.

Possible H<sub>2</sub>S gas production: Slight possibility of H<sub>2</sub>S.

In/near Class I air quality area: No Class I air quality area nearby.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Existing field infrastructure to handle gas. No concerns.

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### Water Quality

(possible concerns)

Salt/oil based mud: Yes, long string hole will be drilled with oil based invert drilling fluids. Surface casing hole will be drilled with a freshwater, and freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: Yes, live water in nearby prairie pothole to the east from this location.

Water well contamination: None, closest water wells in the area are about 3/8 of a mile to the northwest, about 3/4 of a mile to the east, about 3/4 of a mile southeast and about 7/8 of a mile to the west from this location. Depth of these industrial wells are from 11' to 289'. Surface hole will be drilled with freshwater and freshwater drilling muds. The surface casing setting depth. of 1250' should be below all freshwater zones.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No, Class I stream drainages.

Mitigation:

☐ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☒ Closed mud system

☒ Off-site disposal of solids/liquids (in approved facility)

☒ Other: Freshwater drilling fluids will be land applied with surface owner approval.

Freshwater drill cuttings will be mixed buried on site with surface owner approval. Oil based drill cuttings will hauled to an approved disposal.

Comments: 1250' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer

### Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: Small cut, up to 6.8' and moderate fill, up to 12.0', required.

Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large well site 430'X430'

Damage to improvements: Slight, surface use is a cultivated field.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other \_\_\_\_\_

Comments: Access will use existing county road, Lone Tree Road.. A short road will be constructed into this location, about 40' Surface hole (freshwater) cuttings will be mixed buried on site. Oil based invert mud cuttings will be trucked to an approved waste disposal facility. Oil based drilling fluids will be recycled to the next location or returned to the mud company's recycling facility. Freshwater surface fluids and horizontal freshwater polymer fluids and cuttings will be land applied. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residences are, about 5/8 of a mile to the southwest, 3/4 of a mile to the east, 7/8 of a mile to the southeast and 7/8 of a mile to the north from this location. Cemetery is about 5/8 of a mile to the southwest from this location.

Possibility of H2S: Yes, slight.

Size of rig/length of drilling time: Heavy double drilling rig 10 to 15 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

### Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Only species identified as threatened or endangered are the Whooping Crane and Piping Plover. Species of concern is the Sprague's Pipit. NH tracker website lists fifteen (15) species of concern. As follows: Bairds Sparrow, Le Conte's Sparrow, Nelson's Sparrow, Grasshopper Sparrow, Sprague's Pipit, Ferruginous Hawk, Chestnut Collared Longspur, Piping Plover, Black Tern, Sedge Wen, Yellow Rail, Bobolink, Long Bill Curlew, McCowen's Longspur and Smooth Greensnake. The surface location is in a cultivated field.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: \_\_\_\_\_

Comments: Private cultivated surface lands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

### **Historical/Cultural/Paleontological**

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: \_\_\_\_\_

Comments: Private cultivated surface lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

### **Social/Economic**

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns. Development oil well in the East Flat Lake Field.

### **Remarks or Special Concerns for this site**

A development Ratcliffe Formation oil well within an existing oil field, East Flat Lake Field  
\_\_\_\_\_  
\_\_\_\_\_

### **Summary: Evaluation of Impacts and Cumulative effects**

No long term impacts expected. Some short term impacts will occur, but can be mitigated in a short time.  
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\_\_\_\_\_  
\_\_\_\_\_

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki  
(title): Chief Field Inspector

Date: November 27, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website.

\_\_\_\_\_  
(Name and Agency)

Sheridan County water wells\_\_\_\_\_

(subject discussed)

November 27, 2011

\_\_\_\_\_  
(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA  
COUNTIES, Sheridan County

(subject discussed)

November 27, 2011\_\_\_\_\_

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T37N R57E

(subject discussed)

November 27, 2011\_\_\_\_\_

(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_